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AUTHOR Seegmiller, Bonni R.
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ABSTRACT

The purpose of this study was to determine whether maternal employment affects sex role differentiation in preschoolers, and whether this relationship varies as a function of the sex of the child, father's presence or absence, and/or the sex of the child's siblings. Three hundred ninety-eight children (198 females, 200 males), whose mean age was 51.2 months, were tested. The dependent measure consisted of a maximally reliable composite Z score derived from five tests (Draw-A-Person, Occupational Preference, Nadleman Recall, Toy Preference, It-Scale for Children). The fact of the mother's working and the social status of her occupation were unrelated to sex-role differentiation, regardless of whether (1) the child was a girl or a boy; (2) had brothers, sisters, both, or was an only child; or (3) came from an intact or nonintact family. However, the main effect for sex and the sex of child x sex of sibling interaction were significant. (Author/RH)

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Effects of Maternal Employment on Sex-Role Differentiation in Preschoolers[1]

Bonni R. Seegmiller[2]
Hunter College of the City
University of New York

SUMMARY

The purpose of the present study was to determine whether maternal employment affects sex-role differentiation in preschoolers, and whether this relationship varies as a function of the sex of the child, father's presence or absence, and/or the sex of the child's siblings. Three hundred ninety-eight children (198 females, 200 males), whose mean age was 51.2 months, were tested. The dependent measure consisted of a maximally reliable composite Z score derived from five tests (Draw-A-Person, Occupational Preference, Nadleman Recall, Toy Preference, It-Scale for Children). The fact of the mother working, and the social status of her occupation, were unrelated to sex-role differentiation, regardless of whether the child was a girl or a boy; had brothers, sisters, both, or was an only child; or came from an intact or nonintact family. However, the main effect for sex as well as the sex of child x sex of sibling interaction were significant.

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A. INTRODUCTION

A large number of studies have consistently shown that sex-role differentiation (here used in the broadest sense to refer to both the process and end-product of learning what society considers exclusively or more appropriate for one sex or the other) begins very early in life, and is certainly evident during the preschool years (5, 6, 13, 14, 46). Various theories have attempted to attribute such differentiation to factors such as parental personality influences on the resolution of the Oedipal complex (16), differences in the availability and determination of the proper goal object (29), awareness of role distinctions (37), reinforcement, imitation, and observation of parental models (35), and cognitive reorganization that is independent of specific environmental influences (28). Thus, with the exception of cognitive developmental theory, aspects of the environment are considered to play particularly important roles in sex-role differentiation.

Given that sex-role differentiation occurs at such an early age, factors that are present at that time must be considered in any attempt to understand this process. One such variable is maternal employment, which has increased three-fold since the 1950's so as to presently include 37% of all married women with children under six (52). Particularly in regard to sex-role differentiation, all theories that stress environmental factors consistently predict that children of working mothers should be less sex-role stereotyped in that these mothers serve as models who are themselves less stereotyped, show greater encouragement of independence, and have households in which the men participate more in

traditionally-defined feminine tasks such as child-rearing (23). Maternal employment is expected to have its greatest effect on female children, who have the mother as their primary model (23).

Despite this theoretical convergence, the empirical data have yielded inconsistent results (12, 23, 43). This may be due in part to methodological differences between the investigations. For instance, the various instruments used may or may not have measured the same thing; even for those that did, they may have not done so with the same degree of reliability and validity (7, 44). Additionally, the samples included in the studies were small and differed widely in terms of subject characteristics (e.g., age, sex, intactness of family, SES, sibling constellations, etc.) which previous work has shown to be associated with sex-role differentiation (35, 46, 47). For example, boys have been found to be more sex typed than girls (7, 8, 14) and children from intact homes hold more rigid sex-role concepts than those from nonintact families (3). Similarly, children from lower-income homes (39), as well as those with same-sex siblings (27), have also been shown to hold more strongly differentiated opinions about what is appropriate for one sex or the other than do those from middle-income, and mixed-sex sibling families. These variables have not shown such effects in all studies, however, and their interactions with maternal employment in regard to sex-role differentiation remain relatively unexplored, particularly with young children.

The purpose of the present study is to determine whether the relation between maternal employment and sex-role differentiation varies as a function of the sex of the child, intactness of the family, or the sex of the child's siblings. The maternal employment

variables included in the study were (a) whether or not the mother was employed, and if so, (b) the occupational status of her job. A composite score, based on five tests, is used as the dependent measure of sex-role differentiation in order to maximize reliability (46).

The major hypotheses are that children whose mothers work will differentiate less between sex roles than will those whose mothers are not employed, and that girls will be more affected than boys (12, 23). Hypotheses regarding other factors included in the study were less clear, considering the conflicting results from previous work on this topic. However, the following exploratory predictions were made for the two-way interactions that involved maternal employment. In regard to maternal employment and intactness: Since children of working mothers are less stereotyped than those whose mothers do not work (43), and since children from nonintact homes are more stereotyped than those from intact homes (3), children from nonintact, working-mother homes should be least stereotyped; those from intact, nonworking homes should be most stereotyped; and those from intact-working and nonintact-nonworking homes should fall between the other two groups.

In regard to sibling sex and maternal employment: Since children with opposite- or mixed-sex siblings are less stereotyped (27), it was expected that such children of working mothers would be less stereotyped than those having no or only same-sex siblings; these latter subjects should be the most sex-typed, while children of working mothers with no or same-sex siblings and those with nonworking mothers with opposite- or mixed-sex siblings would fall between the other two groups.

In effect, these predictions give equal weight to each of the factors. Predictions regarding the three three-way, and one four-way interactions can thus be easily derived. Equal weights were assigned because the literature does not indicate consistently that any of these factors are of more importance than the others.

B. METHOD

1. Subjects

The study reported here is part of a larger investigation of sex-role differentiation in which 446 children (in 10 three-year-old, 8 four-year-old, and 6 five-year-old classes) in New York City participated. The 226 males and 220 females were almost equally represented in middle- and lower-income schools and the three age groups, as has been described in detail in (46). Complete information on maternal work status, intactness of family, sex of subject, and sibling sex was available for 398 (200 boys, 198 girls) of the children who were tested, as shown in Table 1.

Insert Table 1 about here

The average age of the subjects was 51.24 months (S.D. = 9.50). There were no significant age differences between sub-groups. Fathers were present in 52.5% of the homes (intact), but absent from 47.5% (nonintact). The mothers did not work in 159, or 40% of the homes, but did work (at least 15 hours/week of paid employment) in 239, or 60% of the families. All occupations were classified according to the Hollingshead Scale (24). Fifty-three mothers held high status professional or managerial positions (levels I and II on the Hollingshead); 147 were employed as middle status blue- or white-collar workers (levels III and IV); and 37 held low

status, semi- or unskilled-occupations (levels V, VI, and VII). The specific occupations of two of the employed mothers were not known.

The average number of children per family was 1.81 (S.D. = 1.07). Forty-nine and a half percent of the subjects were singletons, 22.6% had brothers only, 17.9% had sisters only and 10.0% had both brothers and sisters.

2. Sex-Role Measures

The battery of tests consisted of five sex-role measures (full details on administration and scoring may be found in (46)). For ease of exposition, all tests were scored so that a high score indicates greater "masculinity" (i.e., that the child more frequently made masculine choices).

a. Draw-A-Person test (DAP): The child was asked to draw a person and then to draw a person of the opposite sex. The test was scored "2" if a male was drawn first, and "1" if a female was drawn first (possible range: 1 to 2).

b. Occupational Preference Test (OPT): Children were asked what they wanted to be when they grew up, and were asked to give three choices. To score, each occupation was rated on a scale from 1 (traditionally feminine) to 5 (traditionally masculine).

c. Nadleman Recall Test (NRT): In this modification of Nadleman's (36) procedure, each child was presented with pictures of eight masculine and eight feminine items, and had to immediately recall the items. The score used for this test was the relative dominance of masculine over feminine items recalled. The formula used for scoring was

$$\frac{\text{\# of masculine items recalled - \# of feminine items recalled}}{\text{\# of masculine items + \# of feminine items recalled}}$$

(Possible range: -1.00 to +1.00).

d. Toy Preference Test (TPT): In this modification of DeLucia's (10) test, subjects were shown 24 pairs of pictures of masculine and feminine toys and were asked to specify which a pictured little girl (for girls) or boy (for boys) would like to play with. Choosing the more masculine toy of each pair earned the child one point. (Possible range: 0 to 24).

e. The IT-Test for children (BIT): Biller's (2) modification of Brown's (7) procedure was used to control for the masculine appearance of 'It'; i.e., subjects were shown a line drawing of a face ('the child') rather than 'It.' The test consists of pictures of masculine and feminine toys, peers, and activities; the subject was asked to make a choice for 'the child' from among a series of pictures. Scores could range from 0 (all feminine choices) to 84 (all masculine choices).

3. Scoring

A composite based on these five tests was derived for each subject so as to maximize reliability. First, Jöreskog's (25) covariance structure analysis was used to investigate whether the five tests measured the same dimension of sex-role differentiation, i.e., were congeneric. The matrix of intercorrelations among the tests -- DAP(x_1), OPT(x_2), NRT(x_3), TPT(x_4), and BIT(x_5) -- was submitted to the Analysis of COVariance Structures -- ACOVA program (26). The maximum likelihood estimates of β_i, τ_{ei}^2, and γ_{ii} were obtained. Correlations and standard scores were used

throughout so that variance differences among variables would not influence their relative contributions to the linear composite. The value of χ^2 for the test of congenerism was 3.41 (df = 5, p .60). Thus, there was not sufficient evidence to reject the null hypothesis that the tests are congeneric.

Based on this finding, the composite scores were computed using the following vector of weights: α' = (.725, 1.294, .479, .782, 1.207). The reliability of this composite, which has maximum reliability of all weighted linear combinations of the five tests under the assumptions of the stated model is .72. This value is, of course, an index of the internal consistency of the five tests.

Although it would be preferable to use a measure of sex-role development with greater reliability, a review of the literature indicated that these five tests were among the best available. In general, measurement error in the dependent variable introduces "noise" into the system with the effect that the power of statistical tests is lowered. Estimates of effects in analysis of variance and regression coefficients in multiple regression remain unbiased, but their standard errors are increased so that larger sample sizes are required to detect nonzero population effects. The fact that the N for this study is very large compared to most investigations on this subject greatly diminishes the problem introduced by a somewhat unreliable dependent variable. In fact, in this study, the power of the analyses of variance to detect a significant environmental effect that explained only one percent of the sex-role composite variance averaged .80 (Cohen, 1977).

For these reasons, the maximally reliable composite Z score is used in reporting all results.

4. Procedure

Subjects were tested individually in a room at their school that had been temporarily given over to testing. Half of the children of each sex were tested by same-, half by opposite-sex testers who were known to the children. The test battery usually took about 40 minutes to administer, usually in one, although sometimes in two or three settings, depending on the attention span of the child.

C. RESULTS

Preliminary analyses indicated no significant differences attributable to either socioeconomic level (middle- or lower-income school, as described in (46, 47, 48)), or tester sex (45). Therefore, data were collapsed across these categories for all analyses presented here.

To analyze the effects of the mother working on sex-role differentiation, two 4-way least squares analyses of variance were performed on the maximally reliable composite Z scores. The factors in the first analysis were 2(maternal employment status) x 2(child sex) x 2(intactness of family) x 4(sibling sex). The levels of each factor are shown in Table 1. In all cases, Fisher's "protected t" (9) was used to test mean differences. All differences reported as significant reached at least the .05 level.

The maximally reliable composite scores for each group are shown in Table 1. Overall, the findings showed a general lack of difference between preschoolers that could be attributable to

their mothers' employment, as the nonsignificant main effect for maternal employment status indicates, $F(1, 366) = .221$, $p < .60$. The sex-role differentiation of children whose mothers worked did not differ from the sex-role differentiation of those children whose mothers were not employed. Nor did maternal employment interact with any of the other factors to influence sex-role development.

Although the major concern of this study was with maternal employment, the analysis also yielded information about the main effects and interactions between the other factors. Boys and girls did differ, as shown by the significant main effect of sex, $F(1, 366) = 478.47$, $p < .001$. Boys made more masculine choices ($M = +.472$) than did girls ($M = -.477$). The differences between boys and girls varied as a function of the sex of the child's sibling(s), as indexed by the significant child sex x sibling sex interaction, $F(3, 366) = 3.52$, $p < .015$. Although boys and girls differed regardless of whether they were singletons, had brothers only, had sisters only, or had both brothers and sisters, the largest differences were found between singleton boys ($M = +.508$) and singleton girls ($M = -.513$), and between boys with brothers only ($M = +.528$) and girls with brothers only ($M = -.605$). The smallest differences were found between boys with sisters only ($M = +.392$) and girls with sisters only ($M = -.298$) and between boys ($M = +.371$) and girls ($M = -.398$) with brothers and sisters. Another way to summarize these results is to say that singletons and children with only brothers gave the greatest number of sex-typed responses (most masculine choices for boys, most feminine choices for girls), whereas children with sisters or siblings of both sexes were least

sex-typed. The former groups did not differ from each other, nor did the latter.

Neither the main effect for intactness, nor any of the interactions involving this factor were significant.

A second 4-way least squares analysis of variance was applied to the data, substituting the three categories of occupational level for maternal employment status. The results of this second analysis exactly paralleled the findings of the maternal employment status analysis. Whether the mother was employed in a high, middle, or low status job was unrelated to her child's sex-role differentiation. The only significant main effect was for the sex of the child, $F(1, 196) = 327.88$, $p < .001$, with boys making more masculine choices than girls. The only significant interaction was that between child sex and sibling sex, $F(3, 196) = 2.62$, $p < .05$. The patterns for the individual means were the same as for the first analysis.

D. DISCUSSION

The major purpose of this study was to examine the effects of maternal employment on sex-role differentiation in order to determine (a) whether children whose mothers work hold less rigidly defined sex-stereotypes than those whose mothers do not work, and (b) whether the same is true for those children with mothers in high as opposed to low status jobs. In addition, the study investigated whether the effects of maternal employment on sex-role differentiation varied differentially as a function of the sex of the child, sex of the siblings, and/or intactness of the family.

The results of this study failed to support the hypothesis that maternal employment is related to less rigid sex-role differentiation in children. That is, children of working mothers were neither more, nor less, sex-stereotyped than children whose mothers were not employed. This was true regardless of whether the child was a boy or a girl, an only child or one with same- or mixed-sex siblings, or a child from a father-present or father-absent home. Furthermore, amongst those children whose mothers did work, no differences were evident that were attributable to whether the mother worked in a high- (professional or management), middle- (blue- or white-collar), or low- (semi- or unskilled) status occupation. These findings are consistent with those of Gold and Andres (17), Marantz and Mansfield (33), and Thompson (51) but conflict with the results of other research (e.g., 1, 18, 34, 38, 41). These latter studies indicated that children of working mothers were less stereotyped than those whose mothers were not employed.

A major part of the discrepancies between these studies may be attributable to the subjects' ages. Except for the Gold and Andres (18) study, which used four-year-olds, the investigations yielding positive results were conducted on older children. In fact, in another study of four-year-olds, Gold, Andres, and Glorieux (19) failed to find significant differences between children of working and nonworking mothers (as measured on the ITSC). Thus, the negative findings of numerous studies (see reviews, e.g., 12, 23), along with the at best inconsistently positive findings of but a few investigations on young children, lead to the conclusion that maternal employment effects are dependent on age,

and that before approximately five, whether the mother works is not particularly important to sex-role differentiation. After the age of five, however, maternal employment becomes influential.

Although not a major purpose, the present study also provided information about differences in sex-role differentiation due to intactness of family, child sex, sex of siblings, and the interactions between these factors. These data failed to support the hypothesis that children from intact families would be more stereotyped than children from non-intact homes. The father's presence or absence in the home was unrelated to sex-role differentiation for the children comprising this sample. This was true regardless of the child's sex or the sex of other children in the family. These results agree with those of Herzog and Sudia (22), and indirectly support Marantz and Mansfield's (33) finding of the independence of father participation and sex roles. However, the data conflict with those of other studies (e.g., 3, 30, 31) that have shown a positive relation between family intactness and sex-role differentiation. As with the maternal employment variable, age differences may at least partially account for these inconsistencies.

Sex differences were significant in this study, as was the interaction between sex of child and sex of sibling. The difference between boys and girls found in this study was highly significant, confirming the results of others on this age group (e.g., 7, 8, 14, 44, 48). Boys gave more masculine responses than girls, as measured by the maximally reliable composite score. Data presented elsewhere showed that this was also true for each of the five tests (49).

There can be no doubt that sex-role differentiation is present in children of preschool age. Within the first three years of life, children are already making differential choices based on sex.

These sex differences were evident across all sibling constellations. However, having brothers, sisters, or siblings of both sexes differentially affected the magnitude of the difference between boys and girls. The hypothesis that children with same-sex siblings would be more sex-typed than children with opposite-sex siblings was only supported for boys. Male subjects who had only brothers were significantly more masculine than male subjects with only sisters or with both sisters and brothers. The same was true for singleton boys. For females, however, the hypothesis was not supported. In fact, the reverse was true: the most feminine choices were made by female subjects with brothers, not sisters, and by those girls who had no siblings. Female subjects with only sisters and with siblings of both sexes made the fewest feminine choices and the greatest number of masculine choices. Thus, singletons and children with only male siblings make the greatest distinctions between sex roles, while having sisters acts to lessen the rigidity of sex roles. In other words, brothers and sisters differentially influence sex-role development.

What mechanisms might be at work here? Previous work has shown that distinctions along the lines of sex appear to be more important for boys than girls. Boys have been found to show earlier (e.g., 8, 9, 11) and stronger (e.g., 14, 36) sex-typing than do girls. Boys also avoid inappropriate items more than girls (50) which might also explain why girls know more about masculine roles than

boys know about feminine roles (11, 21, 40). Applied to the present data, these studies might indicate that having only brothers reinforces "appropriate" sex-typing as the brothers emphasize the importance of masculinity in boys and femininity in girls. In other words, brothers teach boys that they must be masculine, and girls that they must be feminine. Additionally, for girls, a "contrast effect" (4) or "deindividuation" (42) may also be at work. This could occur in two ways: (1) brothers may differentiate themselves from the less-valued feminine by reinforcing the difference between them and their sisters, or (2) the girls, in attempting to deindividuate from their solely male siblings, do so by adopting stereotyped sex roles.

On the other hand, since females have been shown to be less concerned in general with sex typing, having only sisters should result in a situation in which the child is not as pressured to conform to "appropriate" sex typing as is the case with having brothers only. That is, in such circumstances, it would be less important for boys to avoid femininity and for girls to avoid masculinity. And, of course, females, perceiving that masculine traits are valued more highly in our society, might feel less constrained to feminine choices if they had no brothers. The data presented here, as well as those reported in (20) and (50) support this interpretation that brothers and sisters differentially affect sex-typing.

Children with siblings of both sexes should be less sex-typed than boys or girls with brothers only in that the effects of siblings of one sex should be mitigated by the siblings of the other sex. The present data support this interpretation. The finding that

only children were as highly sex-typed as children with only brothers is consistent with the results of other studies (see Sutton-Smith & Rosenberg, 1970, for a review) and supports the hypothesis of a greater dependence upon parents by the firstborn.

How can the results of this study be integrated? The finding of no relation between maternal employment, or intactness of family, and sex-role differentiation in preschoolers might be interpreted to mean that young children are not as dependent upon their parents for sex-role learning as psychoanalytic- (16), role- (37), social learning- (35), or Lynn's theory (30) might suggest. This result would be in keeping with cognitive developmental theory (28) which emphasizes cognitive reorganization almost to the exclusion of environmental influence. However, a pure cognitive-developmental explanation would not adequately account for the data from other studies showing that older children whose mothers work do hold less differentiated sex-role concepts or for the data from this study showing that preschoolers' sex-role differentiation is influenced by their siblings. Evidently, both cognitive and environmental factors must be combined in any adequate theory.

The developmental process involves changing from an earlier stage in which the organism can process only a very limited amount of information (preoperational) to the more advanced stage (concrete operational) in which the organism is able to process many aspects of information simultaneously. Initially, all children are limited in the amount of data they can handle. Thus, young children may center more on their siblings (if present), and whether the mother is or is not employed is not particularly salient. Consequently,

no differences in sex-role differentiation between preschool children as a function of their mother's work status would be apparent. As the children's cognitive capacities develop, however, and they become better able to decenter, more environmental factors could be attended to. As noted in the introduction, parental roles are less differentiated in homes with working mothers than in homes where the mothers do not work. Consequently, the children in working-mother homes would be learning different things from the environment about sex roles than the children in nonworking-mother homes. Children whose mothers are employed would have less rigid role concepts in that their mothers serve as models who function in broader roles. But maternal employment would become salient for the child only after s/he was cognitively advanced enough (sometime between five and seven) to attend to and make use of any differences that exist between working and nonworking mothers (23). Some evidence in support of this interpretation is available (33). The father's presence or absence, according to this theory, might also become more salient only as the child cognitively becomes better able to handle more complex information. Before the age of five or so, the child might be less influenced by his or her particular father and more influenced by other pressures; most children in father-absent homes certainly are exposed to substitute models (e.g., on television, in school) of sex-role stereotyping which may cancel any effects of father absence.

If parental characteristics do not exert crucial influences on sex-role differentiation, what kind of factors do? Notwith-

standing Kohlberg's (28) suggestion that children learn cultural stereotypes rather than being directly influenced by environmental factors, the data presented here suggest that a primary source of information about sex roles for the young child is the sibling. Having brothers is of different consequence to the child than is having sisters. As has been shown elsewhere (47) this is true regardless of whether the siblings are older, younger, or both.

Parental variables cannot be dismissed entirely. Previous work has shown that parents do treat boys differently than girls (32). Particularly when the subject is the older sibling, the differences reported here may reflect differences between parental treatment of various sibling-sex constellations. And of course, singleton children were highly sex-typed also.

In sum, the present study suggests that maternal employment probably does not exert a very strong influence on sex role differentiation before the age of five. Only then does the child seem to use differential environmental information relating to maternal employment. Before this time, the siblings play an especially important role in the sex-role differentiation of preschoolers. More studies are needed of these variables. Specifically, measures of maternal employment, sex-role differentiation, cognitive development, and sibling characteristics should be examined simultaneously in longitudinal studies. This would enable researchers to determine whether the relationships between these variables change with age and/or developmental level.

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Hunter College of the City University of New York

Box 1449

695 Park Avenue

New York, N. Y. 10021

FOOTNOTES

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[2]Requests for reprints should be sent to Bonni R. Seegmiller, Department of Psychology, Hunter College of the City University of New York, Box 1449, 695 Park Avenue, New York, N.Y. 10021.

Table 1

Number of Subjects and Mean Maximally Reliable Composite Z Scores by Mother's Work Status, Child Sex, Intactness of Family, and Sibling Sex

	Mother Works				Mother doesn't work			
	Boys		Girls		Boys		Girls	
Group	M	N	M	N	M	N	M	N
Not Intact								
Only Child	.588	8	-.503	19	.446	33	-.466	45
Only Brothers	.453	9	-.801	3	.514	9	-.543	9
Only Sisters	.401	5	-.236	5	.470	10	-.220	7
Brothers and Sisters	.326	9	-.235	8	.353	4	-.710	6
Total	.442	31	-.429	35	.455	56	-.472	67
Intact								
Only Child	.452	19	-.537	19	.544	32	-.546	22
Only Brothers	.528	11	-.601	14	.619	20	-.474	15
Only Sisters	.360	11	-.405	15	.337	12	-.329	6
Brothers and Sisters	.409	3	-.166	1	.396	5	-.479	4
Total	.445	44	-.507	49	.519	69	-.489	47
Grand Total	.444	75	-.475	84	.490	125	-.479	114